

What is claimed is:

1 1. A precise cutting device for splitting a test
2 piece, comprising:

3 a microscope, comprising:

4 a support arm;

5 a stage having an opening and movably connected
6 to the arm to support the test piece; and

7 a lens set disposed on the top of the support
8 arm, adjustable to show the micro-
9 structure of the test piece;

10 a cutter disposed under the stage of the microscope
11 and passing through the opening to form notches
12 on the surface of the test piece.

1 2. The precise cutting device as claimed in claim
2 1, wherein the stage has a clip to fix the test piece and
3 a first position adjuster to shift the test piece
4 horizontally within a predetermined area.

1 3. The precise cutting device as claimed in claim
2 1, further comprising:

3 a second position adjuster disposed under the stage,
4 elevating the vertical position of the cutter
5 assembled thereon.

1 4. The precise cutting device as claimed in claim
2 1, wherein the cutter has a diamond tip.

1 5. The precise cutting device as claimed in claim
2 1, wherein the cutter has a wheel knife at the tip of the
3 cutter.

1 6. The precise cutting device as claimed in claim
2 1, further comprising:

3 an image sensor disposed on the lens set, sensing
4 optical images and converting them into
5 electronic signals; and

6 a monitor electrically connected to the image sensor
7 and displaying the electronic signals.

1 7. The precise cutting device as claimed in claim
2 1, wherein the image sensor is a charge-coupled camera.

1 8. A test piece splitting method for a precise
2 cutting device with a microscope and a cutter, the
3 microscope having a stage with an opening, a lens set and
4 a first position adjuster, the cutter having a tip and
5 disposed under the stage of the microscope, the test
6 piece splitting method comprising the steps of:

7 providing a test piece having a surface with a
8 target point;

9 fixing the test piece to the stage with the surface
10 contacting the stage and the target point
11 disposed within the range of the opening;

12 adjusting the amplification of the lens set to show
13 a distinct view of the target point;

14 forming a first notch and a second notch on the
15 surface, wherein the first notch and the second
16 notch are aligned with the target point in a
17 predetermined line, and the distance between
18 the neighboring end points of the first notch
19 and the second notch is a first interval; and

splitting the test piece along the predetermined
line.

9. The method as claimed in claim 8, wherein the
first interval is within 1mm to 50 μ m.

10. The method as claimed in claim 8, further
comprising the steps of:

changing the vertical position of the tip of the
cutter to contact the surface;

moving the test piece disposed on the stage by the
first position adjuster to change the position
of the tip to arrive at a first point on the
surface;

raising the cutter a second distance to cut into the
test piece;

moving the test piece by the first position adjuster
to form the first notch;

lowering the cutter the second distance;

moving the test piece by the first position adjuster
to change the position of the tip to arrive at
a second point on the surface;

raising the cutter the second distance to cut into
the test piece; and

moving the test piece by the first position adjuster
to form the second notch.

11. The method as claimed in claim 10, wherein the
first point and the second point are the nearest points
of the first notch and the second notch to the target
point.

1 12. The method as claimed in claim 10, wherein the
2 second distance is about 50µm to 10µm.